

Chapter 11 Command and Communications Systems

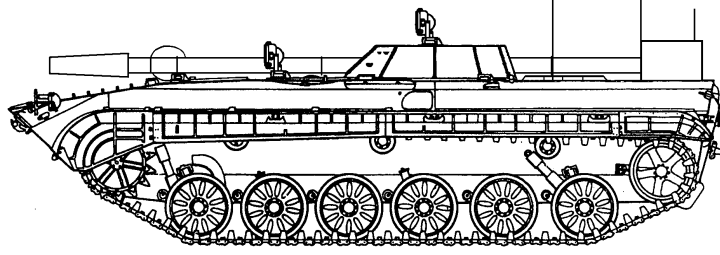
Command systems in the WEG will initially be limited to command vehicles, such as the listed BMP-1KSh.

This chapter provides basic characteristics of selected tactical communications systems either in use or readily available to the OPFOR. This selection of radios is not intended to be complete; rather, it is representative of the types and capabilities that are currently fielded or available. Radio tables are divided into two sections, single channel and frequency hopping systems. Later updates of this chapter will include information on additional categories of communications systems.

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Russian Command and Staff Vehicle BMP-1KSh

| | | |
|---|--|---|
|  | <div>Weapons & Ammunition Types</div> <div>Stowed 7.62-mm MG</div> | <div>Typical Combat Load</div> <div>2,000</div> |
| <div>SYSTEM</div> <div>Alternative Designations: BMP M1978</div> <div>Date of Introduction: 1976</div> <div>Proliferation: At least 3 countries</div> <div>Description:</div> <div>Crew: 3</div> <div>Troop Capacity: N/A</div> <div>Combat Weight (mt): 13.0</div> <div>Chassis Length Overall (m): 6.74</div> <div>Height Overall (m): 2.07</div> <div>Width Overall (m): 2.94</div> <div>Ground Pressure (kg/cm²): 0.57</div> <div>Automotive Performance:</div> <div>Engine Type: 300-hp Diesel</div> <div>Cruising Range (km): 550</div> <div>Speed (km/h):</div> <div>Max Road: 65</div> <div>Max Off-Road: 40-45</div> <div>Average Cross-Country: INA</div> <div>Max Swim: 7</div> <div>Fording Depth (m): Amphibious</div> <div>Radio: R-130 HF, R-107, R-111 VHF, R-123/173 VHF</div> <div>Protection:</div> <div>Armor, Turret Front (mm): 19-23</div> <div>Applique Armor (mm): N/A</div> <div>Explosive Reactive Armor (mm): Available</div> <div>Active Protective System: N/A</div> <div>Mineclearing Equipment: N/A</div> <div>Self-Entrenching Blade: N/A</div> <div>NBC Protection System: Collective</div> <div>Smoke Equipment: VEES</div> | <div>ARMAMENT</div> <div>Main Armament:</div> <div>Caliber, Type, Name: 7.62-mm (7.62x 54R) MG, PKM , stowed</div> <div>Rate of Fire (rd/min): 250 practical / 650 cyclic, 2-10 round bursts</div> <div>Loader Type: Belt-feed (100-rd belts)</div> <div>Ready/Stowed Rounds: INA</div> <div>Elevation (°): INA</div> <div>Fire on Move: No</div> <div>ATGM Launcher: N/A</div> <div>Firing Ports: None</div> <div>SIGHTS</div> <div>Type: INA</div> <div>Sighting range (m): 1,500</div> <div>Magnification: INA</div> <div>Night Sights Available: Yes</div> <div>VARIANTS</div> <div>BMP-1KShM: Variant has upgraded radios.</div> <div>MP-31/1V31 and 9S743 use different radio configurations.</div> <div>MAIN ARMAMENT AMMUNITION</div> <div>Caliber, Type, Name:</div> <div>7.62-mm API, API-T</div> <div>Maximum Aimed Range (m): 1,500</div> <div>Max Effective Range (m):</div> <div>Day: 1,000/400-500 on the move</div> <div>Night: INA</div> <div>Tactical AA Range: INA</div> <div>Armor Penetration (mm): 8 (RHA) at 500 m</div> <div>Other Ammunition Types: Light Ball/Ball-T, Heavy Ball</div> | |

NOTES

For stationary long-range transmissions, HAWK EYE 10-meter folding antenna is removed from carrying case on right side of vehicle and inserted into antenna base, which extends forward from the turret. The trunnions and motor from the base vehicle (BMP-1) gun are used to operate the antenna base. The antenna can then be elevated mechanically to a vertical position.

Other Electronics: R-102 automatic calling device, 1T-219M secure speech device, TNA-1inertial navigation, 1G11N gyrocompass. On the hull rear is a generator to operate the radios.

Options are spall liners, air conditioning, and a more powerful engine. A French SNPE explosive reactive armor (ERA) kit and others are available for use. Additional armor application may jeopardize amphibious capability.

Tactical Single Channel Radios

| Radio | Country of Origin | Description | Frequency Range (MHz) | Channel Spacing (KHz) | Number of Channels | Range (km) | Power Output |
|------------------|-------------------|---|---|-----------------------|--------------------|---|---|
| PRC-105/A | Iran | Man-portable VHF radio | 36-76 | 25 | 1,600 | | 0.6/2.5/5 W |
| PRC-110 | Iran | Man-portable HF radio with 10 pre-set channels | 1.6-29.999 | 100 | 284,000 | | 5/20 W |
| PRC-1077 | USA | Man-portable VHF radio. PRC 1077/GRC-160 (low power) and PRC 1077/VRC-46 (high power) vehicular models. | 30-88 | 25 | 2,320 | | Man-portable: 100m/2/5 W Vehicular: 100m/2/5/50 W |
| PRC/ VRC-4600 | Turkey | Modular family of VHF/FM radios Embedded encryption | 30-76 | 25 or 50 | 920 or 1,840 | 40 w/30W variant | 2.5 W manpack PRC-4620 2.5/10/30 W vehicular VRC-4622 2.5 W tank set VRC-4621 (w/companion 12.5/10/30 W VRC-4623) |
| R-107 | FSU | Provides tactical, manportable FM HF/VHF voice communications | 20-52 | 25 | 1,281 | 6 w/1.5-m whip, 15 w/2.7-m rod or 40-m wire, 25 w/raised long wire | 1 W |
| R-123M | FSU | Vehicle-mounted tactical FM HF/VHF communications | 20-51.5 | 25 | 1,261 | 20 w/4-m whip (moving) 50 w/10-m telescoping mast | 20 W |
| R-130 | FSU | Vehicle-mounted AM HF voice and CW communications | 1.5-10.99 transmit 1.0-10.99 receive | 10 | 950 | 50 w/4-m whip, 75 w/10-m whip or sloping wire, 350 w/symmetrical dipole | 10-40 W |
| R-148 | FSU | Lightweight FM VHF manportable transceiver. | 37.0-51.95 | 50 | 300 | 5 w/1.5-m whip | 1.1-2.1 W |
| R-171M | FSU | Vehicle-mounted FM VHF communications. Capable of 16 kbits/s data transmission. | 30.0-75.999 | INA | | 35-80 claimed | 100 W |
| R-173 | FSU | Tactical FM VHF communications | 30-76 | 1 | | 20 w/3-m whip | 30 W |

Tactical Single Channel Radios (continued)

| Radio | Country of Origin | Description | Frequency Range (MHz) | Channel Spacing (KHz) | Number of Channels | Range (km) | Power Output |
|----------|-------------------|--|-----------------------|-----------------------|--------------------|---|--|
| RU-3 | FRY | Man-portable VHF radio. Digital data up to 2.4 kbit/s, digital voice up to 16 kbit/s. 40 preset channels. | 30-79.975 | 25 | 2,000 | 7 | 0.3/3 W |
| SFH-41 | Sweden | Chameleon tactical hand-held single-channel and FH radio. Receives single-or FH signals and automatically selects FH reply. 12.5, 25, or 50 hps. | 148-174 | 25 or 30 | INA | INA | 2/5 W |
| TRC350 | France | Man-portable HF/SSB radio. Encryption capability. Vehicular-model TRC331, 20 W. | 1.5-30 | 100 | 285,000 | INA | 2 W reduced power 10 W average in data mode 15 W morse, 20 W SSB voice |
| Type 889 | China | Tactical FM VHF voice comms. Capable of 16 kbits/s data transmission in wideband mode and connected to a digital terminal set. | 20.0-49.975 | 25 or 50 | 1,200 or 600 | 30 w/2.85-m (probable) whip, narrow band, and high-power mode | 3 or 20 W |
| VRC-90 | China | Vehicular VHF/FM radio. 16 kbit/s data capability. | 30-87.975 | 25 | 2,320 | | 0.2/3.5/50 W |
| XV3088 | Germany | Man-portable VHF pouch radio. 9 pre-set channels. Maybe vehicular-mounted. 2.4 kbit/s data transmission. | 30-87.975 | 25 | 2,320 | 500 meter remote. | 0.2/5 W 25/50 W with power amp. |

Tactical Frequency Hopping Radios

| Radio | Country of Origin | Spread Spectrum Radio Description | Frequency Range (MHz) | Channel Spacing (KHz) | Number of Channels | Power Output |
|----------------|-------------------|---|-----------------------|-----------------------|--------------------|--|
| ACV46 | South Africa | Vehicular VHF FH. 99 preset channels, embedded encryption. Remote operation by wire up to 2 km | 30-87.975 | 25 | INA | INA |
| ACM48 | South Africa | Man-portable VHF radio. Embedded encryption, data. | 30-87.975 | 12.5 or 25 | INA | 0.4/4 W |
| ART 2000 | Iran | Man-portable or vehicular VHF FH radio with 100+ hps. May be remoted up to 3 km. | 30-88 | 25 | 2,320 | 0.1/3 W |
| JAGUAR-U | United Kingdom | Tactical UHF FH radio, with man-portable, airborne, and mobile/ground station capabilities. Embedded encryption in FH mode. | 225-400 | 25 | 7,000 | Man-portable: 10mW/4W. Airborne: 10mW/4W/15W. Mobile: 10mW/4W/50W. |
| JAGUAR-V | United Kingdom | Man-portable or vehicle-mounted VHF frequency hopping combat net radio, 100 hps. Compatible w/ conventional 25/50 KHz channel-spaced radios. Operates in nine 6.4 MHz sub-bands or full-band 58 MHz. May be remote -operated by wire to 4 km. Embedded encryption | 30-88 | 25 | 2,320 | Man-portable: 10 mW and 5 W. Vehicle-mounted: 20 and 50 watts |
| Leprechaun | USA | Hand-held FH VHF radio. Embedded encryption. | 30-88 | INA | INA | 5 W |
| LVP 235 | India | VHF radio available in FH or fixed-frequency models. Projected 100-150 hps over full band. Embedded encryption. | 30-88 | INA | INA | 5 W |
| PANTHER 2000-V | United Kingdom | VHF FH radio with man-portable, vehicular, and airborne versions. 8 pre-programmable channels. May be remoted up to 4 km. Narrow band: 9 hop bands of 6.4 MHz with 256 channels. Wideband: 58 MHz band with 2320 channels. 100 hps. Embedded encryption. | 30-108 | 25 | 3,120 | Man-portable 20W Vehicular 20W/50W Airborne 20W |
| PRC-73B | Yugoslavia | Man-portable VHF FH radio with 100-200 hps over 5 MHz band. | 30-90 | INA | 2,400 | 5 W |
| PRC-117A | USA | Man-portable VHF FM FH radio. Uses KY-57 VINSON encryption | 30-89.975 | 25 | 2,400 | 0.1/1/10 W |
| PRC-119 | USA | Man-portable VHF FM FH radio. 8 programmable single-channel and 6 frequency-hopping pre-set channels. Integrated voice and data secure communications. | 30-88 | INA | 2,320 | 4.5 W |

Tactical Frequency Hopping Radios (continued)

| Radio | Country of Origin | Spread Spectrum Radio Description | Frequency Range (MHz) | Channel Spacing (KHz) | Number of Channels | Power Output |
|------------------------|-------------------|--|-----------------------|-----------------------|--------------------|--|
| PRC-130 | USA | Man-portable HF FH radio with 10 hps. Embedded encryption. | 2.0-30 | INA | 280,000 | 5/20/100 W |
| PRC-710 | Israel | Hand-held FH VHF radio, embedded encryption. | 30-88 | 25 | 2,320 | 5 W adjustable |
| PRC 1080 | USA | Hand-held FH VHF radio. Embedded encryption, 9 preset channels. | 30-87.975 | 25 | 2,320 | Selectable 100 mW-2W |
| PRC/VRC-9600 | Turkey | Man-portable or vehicular-mounted VHF FH with 100-200 hps. Capable of burst-data transmission. Embedded encryption. | 30-88 | 25 | 3,120 | 5 W man-portable 5/50 W vehicular |
| RAVEN 2V | United Kingdom | Man-portable, hand-held, vehicular, or base station VHF FH radio. Capable of burst-data transmission, data-rate adapter. Voice/data encryption, remote operation. Expected hop rate approx 150 hps. | 30-88 | 25 | 2,320 | Vehicular 50 W |
| RU-5 | Yugoslavia | Man-portable VHF/FM FH radio. Embedded encryption. Up to 16 kbit/s data transmission. Full-band hop set at approx. 100 hps. 10 pre-set channels. | 30-87.975 | 25 | 2,320 | 0.5/5 W |
| SCIMITAR-H | United Kingdom | Vehicular-mounted HF FH radio. Burst-data transmission capability. Wire-remote up to 3 km. Embedded encryption. | 1.6-30 | 100 | 284,000 | 20 W man-portable, 100/400 W vehicular-mounted. |
| SCIMITAR-V | United Kingdom | Man-portable or vehicular VHF FH radio with 150-250 hps over 58 MHz band. Embedded encryption. | 30-88 | 25 | 2,320 | 0.1/5/50 W |
| SEM 173-193 CNR System | Germany | Modular series of VHF CNR radios, with the SEM 173 transceiver as the common unit. Remote operation up to 4 km. Embedded encryption. SEM 173 man-portable; SEM 173 V vehicular SEM 183 vehicular; SEM 193 vehicular SEM 183/193 dual station; SEM 193/193 dual station | 30-108 | 12.5 or 25 | 3,120 or 6,240 | SEM 173, 183 0.05/0.5, 5 W. SEM 193, 183/193 0.05/0.5/5/50 W. |
| StarCom | Sweden | Man-portable and vehicular FH VHF radio. Embedded encryption, remote operation by wire up to 6 km. | 30-87.975 | 25 | 2,320 | Man-portable 5 W Vehicular 5/50 W |

